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EASTERN EUROPE—RETROSPECT AND PROSPECT*

By HUEY LOUIS KOSTANICK
University of California, Los Angeles

Geographers work in a world of constant change. Some of these changes proceed at such a slow pace there is little difference to be noted from generation to generaiton but, in other cases, change can be so rapid and so forceful that significant alterations of basic import can be produced in an exceedingly short time.

In the recent volume on *American Geography: Inventory and Prospect*, Preston James wrote that: "Geographical generalizations, like those of all science, must be constantly subject to critical study and review. The regional divisions carefully established by an earlier generation of geographers for the specific purposes of that generation may need to be revised through the application of new criteria in order to define regions more directly relevant to current problems. Concepts regarding causal relations, even if widely accepted at one time, must be scrutinized anew by each succeeding generation of geographers."

Although the need for periodic review of regional characteristics has long been recognized, few such studies have been made. It is often said that such generalizations are easily found in the general textbooks currently in use, but the same texts are also criticized for being "out-of-date" and for containing "misinformation that no longer applies." It is even more difficult to find such information in the literature of geography if one is concerned with major political developments and with the systematic field of political geography, especially if one is concerned with areas of rapid political change as in the Far East, Southeastern Asia, the Middle East, and Eastern Europe.

One of the major difficulties involved in such a review has been severe restriction, if not outright prohibition, of travel and field study in certain areas. But in the past two years the easing of restrictions did make it possible for geographers to travel behind the Iron Curtain in the Soviet Union and in most of the satellite countries of Eastern Europe. Travel in the area plus the dramatic events of the past year now make it both possible and necessary to undertake a reassessment and a re-evaluation of the situation in Eastern Europe. The past year not only marked the end of a major period in Eastern European history but it also gave marked indications of what may well be the new phase of the "Cold War" between East and West.

Changing Historical Periods

In the past fifty years Eastern Europe has experienced three major periods of radical change. The very position and structure of Eastern Europe have undergone transformation since pre-World War I days when the term "Mitteleuropa" conveyed the idea that Central Europe constituted a center of political and cultural gravity and that Eastern Europe, or what was more generally termed "the Balkans," began at the eastern gate of Vienna and was by direct implication a semi-barbaric area in a low state of civilization. Indeed such a cultural and power relationship was not at all untrue. Germany and Austria were dominant figures in continental Europe, and Germany, at least, had aspirations not only to dominate Europe but also to challenge the maritime supremacy of Britain.

*Presidential address of the Association of Pacific Coast Geographers, Stanford, August, 1957.

Eastern Europe, as we envision it today, was at that time essentially a land of monarchical empire control under Turkish, Austro-Hungarian, German, and Russian rule. But the Balkan wars of 1912-1913 saw the rise of small independent states which culminated at the end of the First World War in the creation of a zone of free states stretching from Finland to Greece.

In the inter-war period the term "Eastern Europe" displaced the older concept of "Mitteleuropa" and Eastern Europe appeared on the political face of Europe as a "buffer zone" of national states between Germany and Russia. Although the buffer zone had been created seemingly to block German expansion eastward, it was Germany that gradually gained economic predominance and that in 1939 attempted to take over political and military control as well.

The period of military occupation lasted until 1945 when Germany's defeat set the stage for the postwar period of Soviet expansion into the area, an expansion which literally moved the borders of Eastern Europe westward and which turned Eastern European ties eastward toward the Soviet Union and away from the West. Thus Russian domination and internal Communist control of the satellite states came to be the critical problems of the postwar period. It was this Communist threat to seize all of Eastern Europe which in 1947 forced the United States to undertake direct participation in the affairs of Eastern Europe for the first time. The Truman Doctrine of economic and military aid to Greece and Turkey established a new power factor which, in conjunction with the hesitant actions of the United Nations, managed to achieve an uneasy stalemate, the "Cold War", between Russia and the countries of the West.

In this postwar period there was a rather sharp division of zones of influence. Greece and Turkey were closely linked with the West while Poland, Czechoslovakia, Hungary, Yugoslavia, Rumania, Bulgaria, and Albania became unquestioned satellites of the Soviet Union. In similar fashion Germany and Austria were partitioned into occupation zones which were formalized into "Western" West Germany and "Eastern" East Germany. Somehow Finland managed to stay out of either camp while, in sharp contrast, Estonia, Latvia, and Lithuania became part of the Soviet Union. An anomaly soon developed in this pattern when, in 1948, Yugoslavia fell out with Russian hegemony and, although internal Communist control continued under Tito, Yugoslavia established very close ties with the West.

Thus for a decade, 1946 to 1956, Eastern Europe became a testing ground for Communist ideas, Communist practices, and Communist expansion. But in 1956 the line of continuity in Communist experimentation was abruptly jarred by a new and most significant event—outright revolt by the people against Communist and against Russian control. Even though Soviet troops were able to reassert control over East Germany, Poland, and Hungary, a new power position has been established. This inaugurates a new phase in the Cold War, a phase in which the failure of certain Communist endeavors is openly recognized; a phase in which satellite countries have begun to assert at least limited independence in political and economic action; a phase in which there is promise of greater contact and exchange with the West and with other countries of the world.

Extension of the "Fracture Zone"

It has been customary to characterize Eastern Europe as a "fracture zone" or conglomeration of multifarious ethnic factions. As a result of postwar alterations in the ethnic structure of both Eastern Europe and the Middle East this concept bears re-examination.

The creation of Israel on the shores of the Mediterranean has recreated in the Arab world some of the ethnic contrasts of the marshlands of Europe. From this general standpoint, the fracture zone of European peoples has been extended southward into another continent. Even more marked is the movement of the fracture zone westward onto the plains of Germany with the Slavic expansion of the Russians into northern East Prussia and of the Poles into southern East Prussia and into Eastern Germany.

The boundary has shifted westward to the Oder River re-establishing a thousand-year-old ethnic line of division between the Slavs and the Germans.

In conjunction with the movement of frontiers there has been a significant reduction in ethnic minorities of the individual countries. Although the greatest change has been in the number of Germans and Jews, there has been a marked

Cutting grain with a scythe on a collective farm west of Plzen (Pilsen). Because of the lack of machinery, much work is still done by hand on both private and collective farms.

diminution of other minority groups as well and a consequent growing homogeneity in individual countries from Greece to Poland.

The change is most striking in the case of Poland. Before the war more than a third of the Polish population consisted of minority groups—White Russians, Ukrainians, Germans, Jews, and Gypsies—but a decade after the war, Poles accounted for more than 90 per cent of the total population. It would, however, be a serious error to think that major minority problems have been eliminated. In Poland, for example, Germans are still living in former German territories; some have voluntarily adopted Polish citizenship and Polish ethnic identity while others are without any doubt simply living under other identities.

An even more unusual situation exists in Czechoslovakia. Immediately after the war the Czechs having officially ordered the expulsion of the majority of Germans who previously lived in the country, then urged the Germans to remain because they were needed in industry and in commerce. In reality Czechoslovakia would have preferred to get rid of the Hungarian minority but, under Communist policies, it was thought that this would be unjust treatment of a sister republic. The Hungarians, therefore, are still present, but should the existing political situation change they might easily find themselves again "the unwanted."

Another complication of the minority problem concerns the return of people who for one reason or another fled to the West. It might seem logical that the local people would not welcome the return of minority elements, particularly of local Germans who had been in the Nazi military forces during the war. Although the number is rather small, there has been a return of *Volksdeutsch* into Yugoslavia and Czechoslovakia as well as a return of Jews to Poland and Hungary. But it should also be noted that some of these returnees have again been disillusioned and have again departed, many of the Jews going to Israel as a last hope.

Linked with growing homogeneity is growing nationalism. Thus, while ethnic structure is in a measure being simplified, national animosities are not undergoing similar diminution but to all appearances are becoming intensified. For example, in 1945 and 1946 the leaders of Bulgaria and Yugoslavia talked of uniting in a Balkan federation of Communist states, but by 1948 the Bulgarians were again accusing the Yugoslavs of being anti-Bulgarian. Formerly the Bulgarians had castigated the Yugoslavs for suppressing the Macedonians, now they accused the Yugoslavs of deliberately creating a Macedonian republic in Yugoslavia in an effort to induce a secession movement of Macedonians in Bulgaria.

A more recent example of growing animosity concerns Czechoslovakia. When the Poles and Hungarians revolted against the Russians last fall, they hoped that the Czechs would join them; since this did not happen local tensions between these countries have increased considerably.

Growing nationalism is reflected directly in the movement against Russian control. This movement is separate from the battle against Communism, although obviously related to it. Anti-Russianism is strongest in Poland and Hungary, weakest in Czechoslovakia and Bulgaria. The East German and Polish rebellions were essentially anti-Russian rather than Communist. In Poland there was a Communist leader, Gomulka, who was personally acceptable to the Poles. The result was at least a nominal loosening of Russian ties and a resurgence of Polish patriotism. In the case of Hungary, however, the revolt went past the point of anti-Russianism and became anti-Communist as well. It was this feature which precipitated the full force of Soviet military suppression of what was in fact a counter-revolution. As far as political development is concerned, Eastern Europe is still strongly under Soviet control although there are clear-cut movements against the Russians and against Communism.

Population Losses and Gains

But what about the people themselves? In the last war the area suffered tremendous losses of both people and materiel. In Poland, the net loss of population associated with the war was some 12 million persons, fully a third of the prewar population. In Yugoslavia, the loss was an estimated 1,700,000, nearly an eighth of the prewar total; Greece lost nearly a million out of the prewar total of seven million people.

These losses point up the catastrophic cost of the war in lives as well as in material possessions. To be sure, not all of these people were true war-time casualties but, as far as the countries are concerned, their disappearance was a net loss whether such disappearance was by death, emigration, or by cessions of territory to other countries.

Despite such wartime losses, population has either reached or surpassed prewar totals in all countries except Poland, Czechoslovakia, Romania, and East Germany where wartime deaths and population dislocations added to loss of territories created too great a gap. The material effects of the war are still quite evident, particularly in East Germany and Poland where ruined towns and cities, such as East Berlin, Wroclaw, Stettin, and even Warsaw, have been only partly rebuilt. It must be noted that reconstruction of wartime damage in Communist-controlled countries has lagged far behind rehabilitation in Western Europe.

Focus in Industry

Nationalized industrialization has been forced at the expense of all other segments of the economy, and, as might be expected, industrialization has proceeded at different rates in different countries. Certainly Albania has not become a world contender, but outstanding development has taken place in Poland and Hungary, and the productive capacities of both Czechoslovakia and Eastern Germany have not only been maintained but also increased.

As in the Soviet Union, economic policies have been focused on the expansion of heavy industry. It is estimated that in 1953 the Eastern European countries, including Yugoslavia, produced 4.7 per cent of the world's pig iron and 5.4 per cent of its steel. Some idea of the general relationship of production may be indicated by the 1954 production of pig iron expressed in millions of tons: Czechoslovakia, 2.8; Poland, 2.6; East Germany, 1.3; Hungary, 0.8; Rumania, 0.4; Yugoslavia, 0.3, and Bulgaria, 0.1.

Although basic productive capacity has increased in these countries, it has been at terrific national cost. In general each country attempted to meet all of its own needs without considering the duplication which might have been avoided by some sort of specialization agreement. Although individual countries of Eastern Europe did attempt some integration of their own needs with those of the Soviet Union, little was done until recently either to ascertain or to consider each other's needs.

Women work with the men in threshing grain on a collective farm near Ceske Budejovice in Czechoslovakia.

The greatest indictment of the industrial programs has been the creation of industry at the expense of agriculture, and the failure to use industry to increase agricultural productive capacity. In short, agriculture was still being carried on in the traditional patterns and, when these traditional patterns were subjected to the added stresses of collectivization and to state planning, agricultural production declined so seriously as to create crises throughout Eastern Europe.

The Failure of Collectivization

Collectivization has clearly failed in Eastern Europe. Following 1948, intensive efforts were made to collectivize peasants and to create state farms patterned after the Soviet prototypes. Yet as early as 1949 Yugoslavia recognized that undue collectivization was a costly mistake. In spite of force and coercion, even during the period of most intensive collectivization, the bulk of agricultural land continued to be privately owned.

It was not peasant resistance to loss of private property which alone precipitated such failure; cooperatives have in fact been quite successful in many countries, especially Bulgaria and Czechoslovakia. But peasant initiative was stifled by lack of personal incentive through forced delivery of produce to the state at low prices; through imposition of quite unrealistic quotas; through entanglement in bureau-

cratic red tape, and through lack of machinery, fertilizers, and good seed. Communist leaders have talked much about farm machinery but they have simply not supplied it. In short, insult has been added to injury to such an extent that peasants sabotaged even that part of the program which might have been successful.

One of the results of the 1956 revolts in Poland and Hungary was to force de-collectivization in most of the countries. Actually much of the land in collectives did not originate through the integration of peasant lands, collectives being created on lands deserted by emigrants or confiscated from large landowners and various types of institutions. For example, in 1953 four-fifths of the land in cooperatives in Czechoslovakia was not private land, and in Poland most of the cooperatives were formed in the western areas taken from Germany. Hence de-collectivization in itself might not mean the return of lands to private control but instead simply reversion to state control.

Collectivization has failed as far as the peasant is concerned but this does not mean it has failed as far as Communist policy is concerned, especially if such policy is dominated by Soviet leaders, because collectivization has been successfully enforced in the Soviet Union. This poses a constant ideological struggle between local Communist leaders and Soviet leaders. Tito's deviation from Soviet policies and the resultant strained relations is a good case in point.

Agriculture in Crisis

In spite of efforts to industrialize, urbanize, and collectivize, Eastern Europe remains predominantly an agricultural area of private farms and rural villages. The peasant is still the mainstay of population. And, just as in previous generations, there is the problem of agricultural overpopulation for which no adequate solution has been found.

Many states, including Turkey as well as the Communist countries, hoped that industrialization would siphon off surplus farm labor. Yet the obvious truth is that agriculture *per se* is underdeveloped and the focusing of attention upon agriculture rather than industry would not only increase output but also employ more labor. Present low yields could be increased substantially by better seed, more fertilizer, new farming methods and, perhaps most important, new economic incentives for the peasant.

Relations with the Soviet Union

Another facet of the causal factors in this crisis concerns relations with the Soviet Union whose actions have had a direct effect on every country in Eastern Europe from Finland to Turkey. Such action has been separate from the development of Communism and Communist control in individual countries.

Greece and Turkey, for example, have been given aid by the United States, such aid being in great part proportional to the threat of Soviet expansion in the Eastern Mediterranean. Aid to Yugoslavia was given not primarily because the United States was eager to support the Communist government of Tito, but because it was thought that such aid would enable Tito to resist Soviet control more effectively, a calculated risk that such aid might not boomerang in the event that Soviet domination won out.

These efforts might be termed "counter-action" in that the objective was to bolster the internal economic structure of those countries. In contrast, Soviet action has not been based upon bolstering the independence of satellite countries but upon exploiting them for Soviet benefit.

Although Eastern Europe has traditionally exported agricultural products in return for manufactured goods, this pattern has undergone drastic revision. The satellite countries are now exporting manufactured goods and certain industrial minerals in exchange for foodstuffs and raw materials from the Soviet Union. Thus the satellites have become a vast processing plant with factories and labor which can be utilized for Soviet benefit. This explains, in part, why satellite industries have not met the needs of agriculture—too much is earmarked for export.

The potential usefulness of the satellites to the Soviet Union may be shown by a comparison of productive capacity. It is estimated that Eastern Europe's crude-steel production is 31 per cent of Soviet production; pig-iron, 27 per cent; electricity, 44 per cent; crude oil, 18 per cent. Combined coal and brown coal output is 103 per cent of Soviet production, although the quality of coal mined is much lower. The East European contribution to the Soviet bloc's potential for either military activities or economic penetration of underdeveloped areas is 30 to 40 per cent of the Soviet Union.

In certain respects a mutual dependency has been created. Eastern Europe depends upon the Soviet Union for the bulk of its iron ore imports, and the Soviet Union is even more critically dependent on Hungarian bauxite for Soviet aluminum production. It is

Coal mine in Polish Silesia at Bytom near Stalinogrod (Katowice). Through the addition of German Silesia, Poland has become the foremost industrial producer of Eastern Europe.

therefore clear why the Soviet Union was so intent upon maintaining its hold on Eastern Europe and why the Hungarian rebellion was so quickly crushed.

Retrospect

Soviet domination and Communist rule have been the outstanding keys to patterns of development during the past decade. Under Communist policies industrial production and mineral output have been substantially increased but agriculture, in contrast, has undergone a severe crisis because of failure to increase or, in some cases, even to maintain former levels of production.

What are the end results of the decade as far as the life of the people is concerned?

The breakdown of historic rural isolation by improved roads and by communication media, such as the radio and village loudspeaker, is significant but should not be viewed as being due mainly to Communist efforts. It would have happened even with other types of regimes in power. For example, such communication has been increased to as great a degree in Turkey as in any of the satellites.

While there have been other social gains, such as increase in literacy and in medical care, there has been a decline in the general standard of living. In the Communist countries, economic pressure has been so severe as to constitute a crushing burden on all except a chosen few. It is the grim reality of day-to-day existence which has perhaps more than anything else produced resistance and resentment to Communist policies and methods.

The Prospect

If this explosive condition is the situation existing today, what are the prospects for the future?

One question concerning the possible course of events was answered by the lack of participation by any Western powers in the Polish and Hungarian revolutions of 1956. At the time there was the extremely unfortunate diversion of the British, French, and Israeli attack on the Suez Canal. Yet any idea that military action was withheld purely on that basis was dispelled by a policy statement by U.S. Secretary of State Dulles on April 22, 1957, to the effect that the United States does not encourage change by violent aggression, and that while we would seek the liberation of captive nations, we would not incite violent revolt.

Without external aid it would be unrealistic to conjecture that the satellites could themselves overthrow the Russians and without this there is scant possibility of overthrowing Communist rule. But, as has been clearly indicated in the past year, it is possible to institute increased contacts with the non-Communist countries of the outside world. The Soviet Union has already utilized this possibility by having satellite countries like Czechoslovakia and Poland undertake to supply industrial goods and services to Arab countries of the Middle East.

In the past two years foreign trade of the satellites with the West has shown a much greater increase than has trade with the other countries of the Soviet bloc. At the same time travellers from the West were being welcomed and facilities increased for foreign visitors. And with all this have come requests for foreign aid from the United States. When Poland concluded an agreement with the United States a few months ago, the Iron Curtain had been openly breached.

If the past decade has been one of Soviet experimentation with Communist policies in Eastern Europe, the new phase offers the possibility of U.S. economic and technical aid. Such a program carries with it the risk that it might simply increase Communist economic and military potential. But it might also be the means of showing Eastern Europe and the world that Western methods can be more successful than Communist methods in raising the standard of living and bettering the way of life of the individual. Certainly without western aid living conditions will not be appreciably improved.

Thus Eastern Europe begins another chapter in its traditional role—a transitland of "Kulturkampf." This chapter will offer unusual opportunities for geographic study.

This study is based upon a number of visits to countries in Eastern Europe both during and since World War II. The Balkans were visited in 1952-53 during a sabbatical leave, under grants from the Ford Foundation and the Social Science Research Council. In 1956 an award by the Inter-University Committee on Travel Grants made it possible to travel extensively by automobile through Poland, Czechoslovakia, and East Germany.

THE PACIFIC NORTHWEST ALUMINUM SMELTING INDUSTRY

A Re-Evaluation

By J. GRANVILLE JENSEN
Oregon State College

It is my purpose to report briefly on the changing significance of the Pacific Northwest as a supplier of the nation's primary aluminum.

In November, 1950, Oregon State College published my monograph entitled, "The Aluminum Industry of the Pacific Northwest," which was an appraisal of the industry at the end of a decade of existence in the region. Its growth had been spectacular both in magnitude and in rapidity of development. The first plant was built by the Aluminum Company of America in 1940 on the Columbia River at Vancouver, Washington. Shortly after, four additional plants were constructed with the aid of Federal defense moneys: Spokane, Longview, and Tacoma, Washington, and Troutdale, Oregon. In 1949 the Pacific Northwest had 50 per cent of the nation's capacity to produce primary aluminum metals.

Availability of large amounts of low-cost, firm electricity from federal projects on the Columbia River, attracted the industry to the Pacific Northwest but its expansion and phenomenal growth were, of course, stimulated by wartime needs. Practically all raw materials, accounting for 50-55 per cent of production costs, were railed into the region from distant suppliers—notably alumina from Alabama, Louisiana, and Arkansas, and petroleum-carbon from California. No bauxite was processed.

In 1950 it seemed that the Pacific Northwest had a critical advantage in having available low-cost electricity and that the region would continue as the nation's major aluminum metal-producing region. There also was reason to believe that plants for the processing of bauxite would develop.

I predicted in 1950 that bauxite processing would come to the Pacific Northwest on the basis of imported ores from Southeast Asia, and that the plant would likely be on the lower Columbia River. Fortunately, no date was given—for no bauxite processing plants have materialized. The principal inhibitor is the fact that no one company in the region has sufficient smelter capacity to support a large alumina plant.

Today, there is even greater reason to think that bauxite processing will develop. Rail freight costs have increased. The mining of bauxite in Southeast Asia is expanding and there have been new discoveries in the Pacific Basin. For example, Hawaiian Islands deposits are reported by Dr. Sherman of the University of Hawaii to contain as much as 650 million tons. The ore is gibbsite mixed with other soil materials. Whether it can be processed in competition with bauxites from Southeast Asia, such as those from Bintan Island or bauxite from Surinam, remains to be seen. Low-grade ores are known in both Oregon and Washington and have been studied by several companies. It is my belief that the ore-processing phase of the aluminum industry will come to the Pacific Northwest on the basis of imported, high-grade bauxite, and that low-grade ores will develop later.

Not only did ore processing fail to develop, but since 1949 the Pacific Northwest has played a smaller and smaller role in smelting. In 1949 the region had 50 per cent of the nation's capacity, but in 1950, only 44 per cent; in 1955 only 35 per cent; in 1958 it will probably account for no more than 27 per cent. It is not that the industry has failed to grow in the Northwest—capacity has doubled since 1950. Existing plants have been expanded from 317,000 tons to 464,000 tons. In addition, three new plants have been built with a total capacity of 228,500 tons (Wenatchee, Washington; Colum-

bia Falls, Montana, and The Dalles, Oregon). But while the Pacific Northwest capacity doubled, the nation's capacity more than tripled.

What conditions turned the industry from the Pacific Northwest? Four interrelated factors were probably responsible for the radically new thinking by leaders of the aluminum industry:

1. In the Pacific Northwest, firm electric power gradually became less available to the industry. This circumstance resulted in part from growing needs of public utilities for a larger share of available power, which they were able to get because of the preference clause in the regulations of Bonneville Power Administration. Thus firm contracts held by the aluminum companies provided for 83 per cent of their total electricity requirement in 1950, but in 1957 provided for approximately 60 per cent. Inasmuch as the aluminum smelting industry must have reliable, firm-power, the fact that 40 per cent of their power requirements had become insecure was a significant influence in turning industry leaders toward other regions.

2. Until after the 1940's, the industry gave little consideration to industrial plant location studies involving analysis of transportation costs. Hydro was considered to be the only source of low-cost electricity—the primary location factor. Today, the critical plant location factor is still low-cost power, but the industry is no longer tied to hydro and detailed location studies are being made.

3. The Pacific Northwest advantage has been increasingly narrowed by rising freight rates. For example, in 1950 the rail charge per ton on alumina from the processing plants of the southeast was $9.18 from Alabama, and $9.01 from Arkansas. Today, the rate is $12.20.

4. Major technical improvements in burning fuel to develop electricity have made the fossil fuels competitive with hydro for aluminum smelting. While there has been indication of an increase in cost of electricity in the Pacific Northwest, the cost of electricity generated by fuel plants has declined sharply.

Using improved gas-fired radial engines developing direct current, it is estimated that electricity is being produced for about 3.9 mills per kilowatt hour with natural gas costing $0.15 per million Btu's. Clearly this fuel is competitive with Pacific Northwest hydro. This question was raised in 1950: "Is the move significant for the future of the aluminum industry, or is it merely a stopgap for the next few years when low-cost hydro power is not available in any section of the nation?" There is now no question that natural gas is more than temporary.

Even more important for the future is the expansion of the industry in or near the coal fields of Texas and the Ohio Valley. The possibility of using coal, conceived by the electric utility companies, began in Texas when Mr. W. W. Lynch of the Texas Power and Light Company succeeded in interesting Alcoa in the lignite beds of Texas. The result is the Alcoa plant at Rockdale, Texas, dedicated in 1954. This particular site, near Austin, was selected because a 10,000-acre block of lignite land was available, together with water and rail facilities. Since then three plants have located in the Ohio Valley coal field area. (Evansville, Indiana; Ravenswood, West Virginia, and Clarington, Ohio).

Recent estimates indicate that these modern coal-burning plants will produce electricity for 3 to 3.5 mills per kilowatt hour. This remarkably low-cost figure applies, of course, only to large plants of about 300,000 kilowatt capacity, directly integrated with the coal mine, supplying coal by continuous conveyor belt, with the aluminum smelter utilizing the electricity on a continuous basis.

Thus, the single natural advantage held by the Pacific Northwest in 1950 no longer exists. In 1958, the Pacific Northwest will have about 27 per cent of the nation's capacity, the Southeast (hydro) about 13, the Northeast (hydro) 3 per cent—making a total of 47 per cent powered in hydro; the oil and gas areas of Texas, Louisiana, and Arkansas account for 26 per cent; and the Ohio Valley coal 22 per cent, and Texas coal 6 per cent.

The changing position of the Pacific Northwest in the nation's aluminum smelting industry is a striking reminder that resources are never static, but rather that their values are ever changing with the evolution of man's technology and economy.

Among Those Present

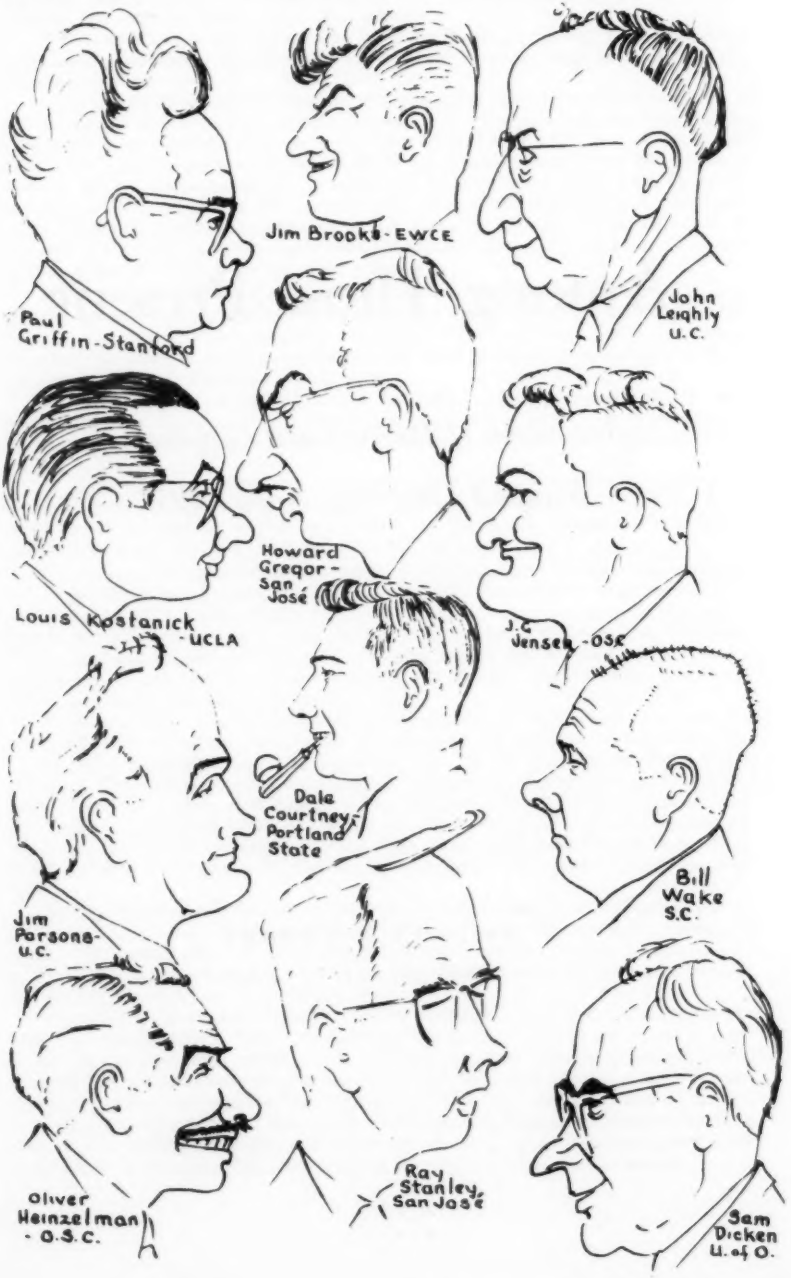
Association of Pacific Coast Geographers

Stanford University, August 1957

By JOHN C. CROSBY

FRESNO STATE COLLEGE

AMONG THOSE PRESENT . . .


Paul Griffin - Stanford
Jim Brooks - EWCE
John Leighly U.C.
Howard Gregor - San José
Louis Kostanick - UCLA
J.C. Jensen - OSC
Dale Courtney - Portland State
Bill Wake S.C.
Jim Parsons - U.C.
Oliver Heinzelman - O.S.C.
Ray Stanley, San José
Sam Dicken U. of O.

A.P.C.G., STANFORD, 1957

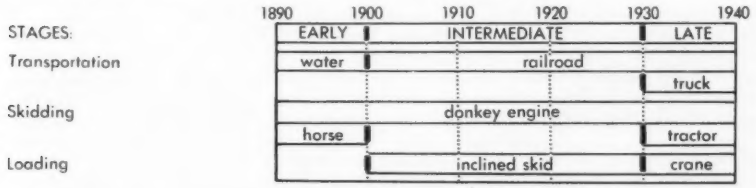
ISOCHRONS OF LOGGING ON THE PACIFIC SLOPE OF OREGON, 1890-1940

By KENNETH A. ERICKSON
University of Oregon

Forest products have been Oregon's largest single source of income since 1849, and in 1950 Oregon ranked first in the United States in lumber manufacture. The total forested area of the state in 1949 was some 30 million acres, 26 million of which were classified as commercial forest land.[1] The major species are Douglas fir, west of the Cascade Mountains, and ponderosa pine, east of the Cascades.[2] The geographical and economic center of the region is the Willamette Valley, an area of farming today but originally one of oak and Douglas fir.

In order that the time period should not be so early that it has little significance, or so late that one may lose historical perspective, and in order to include a series of changes and developments during an era of notable growth, the period 1890 to 1940 was selected. Three important developments in 1890 soon revolutionized the logging industry: the use of the cross-cut saw in falling,[3] ground-line donkey yarding, and transportation of logs to the mill by railroad. As a result of these changes, the use of horses for skidding and the transportation of logs by stream declined in the 1890's. About 1940, the truck began replacing the railroad and the caterpillar tractor became a competitor of the donkey engine; the following years were marked by an abnormal rise in the number of logging operations and the introduction of various types of modern power equipment.

The fifty-year span has been broken into three general periods:



An isochronic map was constructed using the same three time intervals: pre-1900, 1901-1930, and 1931-1940. Map data for these periods proved to be elusive, especially for the initial stage. In 1930 and 1940, the burned areas were included with logged areas and undifferentiated so that the effects of burning may be seen in the pattern of isochrons.

No accurate account of the cut and burned areas before 1900 was available. For this early stage, information appearing on the map was interpreted principally from Winther's history of the Northwest[4] and Cox's rather popular autobiography.[5] The latter work was particularly useful in that it mentioned many of the actual areas where logging operations were carried on.

[1] Freeman, O. W. and Martin, H. H., *The Pacific Northwest* (New York, John Wiley & Sons, 1954), Table 1, p. 225.

[2] U.S. Forest Service, *Pacific Northwest Forest and Range Experiment Station, Forest Statistics* (Portland, 1934-1940). Douglas fir comprises about 2/3, by volume, of the state total of saw timber on commercial forest land.

[3] The term "falling" is in common usage in Oregon, rather than "felling."

[4] Winther, O. O., *The Great Northwest* (New York, Knopf, 1952).

[5] Cox, H. J., *Random Lengths* (Eugene, Shelton-Turnbill-Fuller Co., 1949).

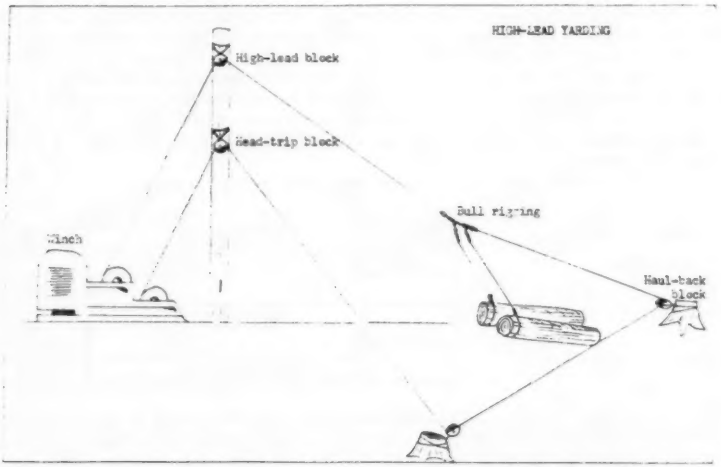
The iso-line for 1930 used tax delinquent private as well as county-owned land as the guide for logged areas.[6] At that time it was fairly general practice for the logging companies to allow the cutover land to revert to the counties for taxes. Therefore this method provided an adequate measure of the deforested area. The 1940 line was the simplest to map because the cut and burned areas in the individual counties were mapped by the U.S. Forest Service about 1940.[7]

The Early Stage, 1890-1900

In the decade 1890-1900 the use of the tractor, log truck, and high-lead yarding was unknown, while the railroad and donkey engine were just entering upon the scene. Hence, the river and the horse were the most important types of transportation from the woods to the sawmill.

There were two distinct types of loggers at the time, each concerned with a separate phase of operation.

To the woods logger fell the job of falling and bucking the logs, a job which was carried on throughout most of the year. At times the woods logger owned a horse which was used to drag the logs to the banks of streams. In this manner logging was highly



From Yearbook of Agriculture, 1949

selective, only the larger trees adjacent to the streams being harvested. It was toward the end of this same stage that the steam donkey, using groundline cable, began yarding the logs, largely replacing the horse in the skidding operation.

The second phase, probably the most picturesque in the history of the industry, involved the river loggers. Between the spring floods and the winter high water, they would drag, pull, or roll logs into the streams. Floating boom timbers, tied together with wire ropes and fastened to a steel cable attached to each bank of the river, temporarily held the logs as they arrived from upstream. When logging was carried on along the smaller tributary streams of the main river, it was necessary to construct a

[6] U.S. Forest Service, *op. cit.*, *Facts Bearing Upon Instability of Forest Land Ownership in Western Oregon* (Portland, 1934).

[7] *Ibid.*, *Forest Statistics for the Counties of Oregon* (Portland, 1938-42).

series of splash dams, impounding the water in the upper dam, then releasing and flooding the logs through one dam to the next until they entered the main stream. When a sufficient number of logs had been collected, the "river drive" began. The river logger's next duty was to guide the logs to the millpond, clearing jams and rescuing stranded logs along the way. The drive could last as long as three months and carry up to 100 miles, depending upon the location of the mill and the area being cut.[8]

A company-owned settlement was generally typical of this early stage. Downstream, at the terminus of a railroad trunk line, were the loading docks and the planing mill on one side of the tracks, and on the other side was the company town, including store, sleeping rooms, and cookhouse. Located upstream, the sawmill was connected with the planing and shipping operations by an elevated flume. The cook and bunk houses for loggers and millmen were also located upstream. Temporary camps for the woods loggers were situated near the site of the actual logging operations.[9]

Frequently there were several companies in operation at the downstream site. These companies and their towns attracted service industries and, therefore, had potentialities for future urban growth. In this group were Eugene, Coburg, Lebanon, Dallas, Molalla, and Forest Grove, all located on the periphery of the Willamette Valley.

Logging operations were typically carried on in wet-point locations. Large areas of relatively level timbered land were not logged if they were inaccessible to an existing sawmill.[10] Interfluvial areas were consistently by-passed but cut-over land was found throughout the Valley wherever streams provided adequate transportation. On the coast, port sites were as important as the drainage pattern. Hence there were only two significant areas of cutting on the west side of the Coast Range, around Coos Bay and Astoria, both of which offered shipping facilities.[11] An interrupted pattern of logging was present in the region south of the Willamette Valley. These rather isolated operations were focused at the intersection of major streams and the Oregon and California Railroad, a line connecting the Willamette Valley with California.[12]

Intermediate Stage, 1901-1930

The rather sharp decline in lumber production of the Lake States, coupled with the realization of the Pacific Northwest's potential, stimulated the acquisition of timberland during 1900 and the following decade. Western Oregon, particularly the timbered public domain in and near the Willamette Valley, was overrun by land sharks, cruisers, speculators, and investigators. As a result, hundreds of men entered the forests to file on timber claims and, in many instances, the entryman had contracted in advance to transfer his title to some outside speculator.

The favorite method of obtaining timberland was to file on two claims of 160 acres each, one under the Timber and Stone Act of 1878, the other under the Homestead Law. The local timber purchaser would contract with each entryman, agreeing to locate him on the land, pay all expenses, railroad fare, land office fees, and advance the money to pay the government at the time of final proof. In many instances, the entrymen were taken to the Government Land Office in groups of ten or more, previous arrangements having been made with the local railroad company for a reduced round-trip fare for groups of that number.[13]

The woods operations of falling and bucking remained largely unmechanized throughout this period. Extensive changes, however, took place in log yarding, in both the donkey engine and in the systems of yarding. The donkey engine was dominant in bringing logs out of the forest during the entire thirty-year period. As the railroad replaced the horse as a means of transportation, the old steam donkey was mounted

[8] Cox, *op. cit.*, p. 88.

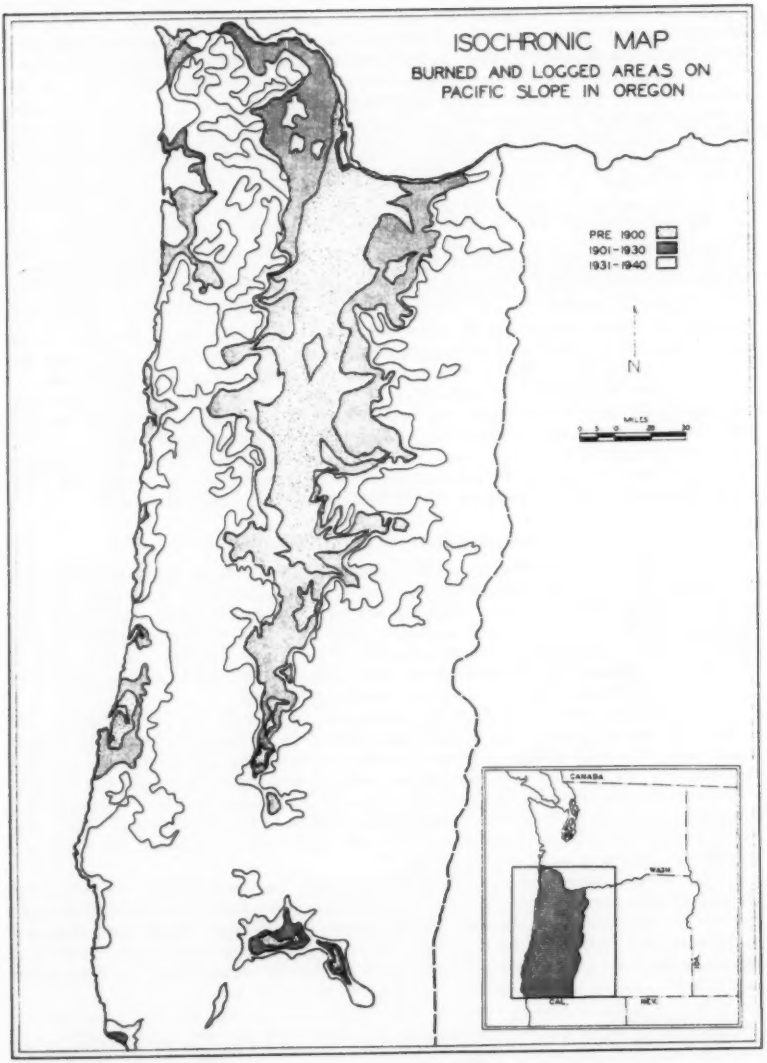
[9] *Ibid.*, pp. 47-55.

[10] By this time much of the Willamette Valley had been cleared for agriculture and cannot be correctly classed as being logged commercially.

[11] See isochronic map of Oregon logging.

[12] Winther, *op. cit.*, pp. 266-68.

[13] Cox, *op. cit.*, pp. 34-35.


ISOCHRONIC MAP
BURNED AND LOGGED AREAS ON
PACIFIC SLOPE IN OREGON
PRE 1900
1901-1930
1931-1940
N
MILES
0 5 0 20 30
CANADA
WASH
CAL.
NEV.

on a flatcar for increased mobility. By the mid-1920's the steam-powered donkey was being replaced by the gasoline- and diesel-powered drum units.[14]

The early donkey engines were used for skidding logs over the ground or skid roads and chutes.[15] High-lead logging, adopted by the larger companies about 1915, involved rigging the cables to a single spar tree in such a manner as to lift the leading end of the log off the ground. A further advance was sky-line yarding in which a cableway was attached between two spar trees giving a lifting effect sufficient to lift the log partially or completely clear of the ground. Both systems represented a marked advance over ground skidding in which stoppages, caused by the catching of logs on stumps or other obstructions, restricted output. As a result of the shift to overhead logging, yarding costs were reduced as much as 13 per cent.[16]

In 1900 when the railroad began to take precedence over the river as a means of transportation, a new method of loading had to be devised. The first attempt was the inclined skid whereby a brow built out from a hillside would hold the logs off the ground about the height of a flatcar. As the logs and the volume to be handled increased, hand loading rapidly became obsolete. Shortly before the First World War an inclined A-frame was introduced with a loading cable passed over the apex to give a lifting as well as a pulling action.[17] Power was usually furnished by a donkey engine.

During these thirty years, company towns, as such, gradually began to disappear. As logging operations shifted deeper into the woods, the land and the company town reverted to the county. In some cases the town simply disappeared from the map, but in certain other cases the service industries had grown sufficiently to attract agriculture and small industry. Some towns actually grew after logging operations in the area declined.

The use of the railroad in the forest facilitated expansion of logging areas. Rivers lost their earlier importance as topography became the governing factor in areas open to logging operations. As the isochronic map shows, the interfluves with low relief were cut and logging extended and widened up the river valleys. There was significant expansion in four regions: the Columbia River area in the Northwest, the edges of the Willamette Valley, the coastal areas, and, late in the period, the Rogue and Umpqua River areas in southern Oregon.

In 1920 the U.S. Forest Service estimated that about 75 per cent of the original forest land remained, approximately 68 per cent of which was virgin stand.[18] Between 1920 and 1930, the depletion of timber continued. It is also estimated that the annual cut of saw timber between 1925 and 1929 was nearly 8 billion board feet, and that about 140 board feet of timber per 1,000 board feet cut, were destroyed by fire, insects, and other causes during each of these years. The ratio of annual drain to annual growth was 10.5 to 1 for the saw timber.

Late Stage, 1931-1940

Both volume and value of timber products declined in this decade because Oregon, along with the rest of the country, was in the throes of an economic depression. In percentage of United States lumber output, however, Oregon and Washington showed a slight increase. Although production regressed, important changes in logging operations soon affected the entire industry. For the first time since 1890, a change occurred in the falling and bucking phase of operation. Power equipment made its entrance, the

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[14] U.S. Dept. of Agriculture, *Trees. Yearbook of Agriculture, 1949* (Washington, D.C.: U.S. Government Printing Office, 1949), p. 698.

[15] Commonly referred to as ground-lead yarding.

[16] MacDonald, Ronald, "High Lead and Ground Yarding Compared," *The Timberman*, Vol. XVIII, No. 1 (1916), p. 55.

[17] Van Tassel, A. J., *Mechanization in the Lumber Industry* (Philadelphia: Works Project Administration, 1940), p. 20.

[18] U.S. Dept. of Agriculture, *Timber Depletion, Lumber Prices, Lumber Exports, and Concentration of Timber Ownership* (Washingtin, D.C., U.S. Forest Service, 1928), p. 32.

chain saw replacing the crosscut saw. This single invention greatly increased the output of each man-hour spent in the woods.

Ground skidding received renewed stimulus with the development of the crawler tractor (caterpillar) equipped with winch and arch. Because the "cat" provided greater flexibility and speed, it was particularly suited to the needs of operators logging the smaller stands.

Beneficial to the small and large operator alike was the introduction of the logging truck. In spite of the greater operating costs of truck hauling compared to rail hauling, truck transportation frequently constituted the only possible method of logging the small or elevated stands of timber where railroad building was unjustified. Such operations were most practical where public highways could be used for the major part of the haul. A rough calculation for 52 Oregon trucking operations studied in 1933 indicated that 86 per cent of the total length of haul was made over public roads.[19]

The shift from railroad to truck and tractor logging, particularly on spur lines, effected a large reduction in construction costs. Furthermore, a considerable reduction in the cost of railroad gradings, truck roads, and tractor roads and trails was effected by the mechanization of construction.

The truck opened previously inaccessible and small scattered stands of timber. Hence there is a notable smoothing of the isochronic lines. Trucks were able to negotiate the steep grades encountered in the mountainous regions, especially in the rugged country of the Coast Range and Klamath Mountains in the southern part of western Oregon.[20] The map shows the extension of logged areas across the divide of the Coast Range. These patterns of linking occur where paved highways cross the mountains, indicating the increased use of truck transport.

[19] Van Tassel, *op. cit.*, p. 48.

[20] In the northwestern corner of the map another area of logging appears to be significant. However, it must be remembered the map included the Tillamook Burn, the first fire in 1933 destroying 240,000 acres of timber; later fires extended the burn to 335,000 acres, or approximately 13 billion board feet of timber.

SOME PROBLEMS IN DESIGNING SAMPLES OF RURAL LAND USE

By RODNEY STEINER
Long Beach State College

There are ever-present demands for detailed knowledge of how much land is used for various purposes. These studies often involve such particular locales, or times, or land uses that only original field work can supply the needed data. Unfortunately, this task is often so great that one is tempted to make land-use mapping an end in itself. A reasonable alternative is to map small areas which are believed to give an accurate picture of the entire locale—in other words, to rely upon sampling.

Traditionally, sampling for quantities of land use has been undertaken only for the problem at hand. The sample design often comes out of the blue because there is no working set of precedents. In turn, a new sampling design cannot be applied reliably elsewhere if there is no means of measuring its initial performance. Such samples are certainly reasonable devices of desperation; nevertheless a bit of carefully directed research might minimize appreciably the existing unknowns in our sampling designs —said unknowns consisting of almost everything. Research properly involves two approaches: first, application of existing theory and, second, repetitive testing of sampling methods which seem most promising.

Application of Existing Theory

Over-all sampling theory has been almost exclusively the creation of nongeographers. Statistical literature is partial to the technique of *random* sampling whereby every spot on the map has an equal "chance" of being sampled and, therefore, the chosen samples are irregularly spaced on the landscape. The virtues of the random method are two: (1) it may provide a built-in estimate of the accuracy of sampling and (2) it may protect the sampler from his own poor judgment, such as the oversampling of school townships or sampling too close to roads, a possibility noted by W. A. Rockie. Unfortunately, the advantages of random sampling are counteracted by an equal number of disadvantages: (1) random selection in its pure form consists, as one forester says, of "shooting arrows blindfolded at a target," so that the sampler is denied use of any prior knowledge about his area; (2) the bulk of evidence suggests that random samples are likely to be less accurate than evenly-spaced, or *systematic*, samples.[1]

There is considerable middle ground between the extremes of random and systematic sampling designs. For instance, random samples can be "stratified" so that there is a guarantee of fair areal coverage. Another integrating device is to create rough formulas to predict accuracy even if the samples are not of the random type. These techniques, and many more, have received considerable attention.[2] However, it is the author's impression that existing sampling studies generally have little direct application to simple rural land-use inventory. They can guide us in experimentation, but they do not now tell us how to design our samples.

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[1] William G. Cochran, *Sampling Techniques* (New York, John Wiley and Sons, 1953), pp. 177-179.

[2] Standard texts dealing with practical applications of sampling theory include Stephen Burr, *Forest Inventory* (New York, Ronald Press, 1952), and Frank Yates, *Sampling Methods for Censuses and Surveys* (New York, Hafner Publishing Co., 1949).

See also Preston E. James and Clarence F. Jones, editors, *American Geography: Inventory and Prospect* (Syracuse University Press, 1954).

Repetitive Testing

With one hopeful but conservative eye on development of sampling theory, we might expect to obtain some rule-of-thumb advice by testing likely sample designs under controlled conditions. The following experiment is reported as a demonstration of the possibilities and the problems of this empirical approach to better sampling.

A map was drawn to portray a hypothetical distribution of one land use in a hypothetical county. The model county, square in shape, represented 324 square miles. Land use was arranged so as to cover 15 per cent of the county area. Samples consisted of selected Land Office sections within the county. Sample sections were selected systematically rather than randomly, in anticipation of maximum accuracy as noted above. Accordingly, the sample sections were as evenly spaced within the county as possible. The initial sample consisted of nine sections. The average coverage of the land use within the nine sections was compared to the over-all, or true, 15 per cent coverage for the entire county, and the sampling error noted. Next, four additional trials of nine sections each were made in order to allow for the usual variation in results from one trial to another.

Average sampling error for the five trials was 15 per cent and maximum error 28 per cent, demonstrating that a sample of nine sections was inadequate for most purposes. Consequently, larger-sized samples were taken, consisting of 18, 27, and 36 sections, respectively. Each size of sample was given five trials as before, and the results from all four sample sizes are presented in the table below. Momentarily assuming a valid experiment, it appears possible to determine, within normal census accuracy, quantities of land use by field-mapping only about one tenth of the county. Superficially, the possibilities appear good for obtaining some land-use data via sampling.

OBSERVED SAMPLING ERRORS

	Five Trials				Ten Trials
Number of Sample Sections	9	18	27	36	36
Average Per Cent Error	15	4	3	3	4
Maximum Per Cent Error	28	8	7	6	15
Minimum Per Cent Error	6	0	1	1	1

Problems in Repetitive Testing

Unhappily, the experiment cited here elicits embarrassing questions concerning its utility—as perhaps all sampling experiments may do. Only by frank appraisal of such difficulties can much useless backtracking be prevented. Three of the more significant problems involved are:

VARIATION OF SAMPLE DATA. Perhaps the most baffling obstacle to better sampling is the tendency of like samples to give unlike results. Virtually any sample design can accidentally attain near-perfection and thus give rise to the assumption that it is a good design: witness the last line in the table above. A single sample trial may, therefore, be worse than no trials at all. When the experiment here was extended to ten trials on the largest size of sample, the range of results was greatly increased. For practical guidance, it is the *maximum* expected sampling error that is critical; any one sample just might happen to have bad luck.[3]

REPRESENTATIVENESS OF THE MODEL. We do not know enough about actual distributions of land uses to create adequate experimental models. Do land uses tend to fall into usable pattern categories, such as "attenuated," "nodal," "agglomerated," etc., and can these be reduced to some convenient common denominator such as coefficient

[3] An alternative explanation for poorer results with the additional sampling in this experiment is that the number of well-spaced arrangements of sampling units was very limited; therefore, the added samples were using inferior patterns which the one-trial field sampler would never have to adopt.

of variation?[4] The hypothetical land use employed here possessed a coefficient of variation of 53 per cent and a normal frequency distribution. Admittedly, typical land uses may possess greater variation and be more skewed in their distribution than was the case in this experiment. If so, sampling may be more difficult than the table of results suggests.

ADAPTABILITY OF THE MODEL. Assuming a representative land-use map is used for sampling experiments, the question still arises as to how many situations one set of sampling recommendations will fit. For example, would the data given in the table also be obtained if the land use happened to cover only 10, instead of 15, per cent of the county, or the county happened to be 625, instead of 325, square miles in size? Without adequate theory or at least many additional trials, individual sampling trials in themselves are of slight significance.

Conclusions

In view of the above problems, it hardly seems surprising that a pioneer state of affairs exists with regard to rural land-use sampling. However, every one of the stated problems can be reduced in scope by the simple expedient of more sampling trials under controlled conditions.[5] It is possible that no all-inclusive sampling methodology can ever be formulated, whether by empirical geographer or theoretical statistician. Nevertheless, we seem obligated to press for improved sample design in this era when census officials are pulling and the citizenry pushing for sampling methods to supplement, and even to replace, complete inventory.

[4] The standard deviation expressed as a percentage of the mean, and in this case, using the Land Office section as the interval.

[5] In a subsequent study to be presented at the 1958 A.A.G. meeting at Santa Monica, the author attempts to minimize problem one above by making 80 trials, and to circumvent problem two by utilizing four actual and varied land-use maps.

MAN'S ROLE IN THE DISTRIBUTION OF THE COROZO PALM (*Orbignya* spp.)

By CARL L. JOHANNESSEN
University of California, Berkeley

Those interested in man's past and in his relationships to his environment receive satisfaction and even a certain exhilaration in finding sites of former human occupation. In some cases, vegetation may be an indicator of these sites. Some plants indicate habitation sites while others indicate areas disturbed by agricultural clearings. In central California certain wild tobaccos, *Nicotiana bigelovii* and *N. attenuata*, and the buckeye, *Aesculus californicus*, are often indicators of early Indian occupance. In Central America the tree gourd, *Crescentia cujete*, and a bromeliad with edible fruit, penguin or penuela, *Bromelia karatas*, are found near present or past home gardens or fences. Chicle, *Achras zapote*, ramon or breadnut (a livestock feed), *Brosimum alicastrum*, and mahogany, *Swietenia macrophylla*, are good indicators of past clearings whenever these trees occur in large numbers.

Many more indicators of former, perhaps long forgotten, occupation by man probably remain to be noted. Such relationships have been observed in Central America in the case of the Corozo palm, and when groves are found they are worth looking into as possible indicators of nearby archeological sites. The Corozo palm (*Orbignya cohune* [Mart.] Dahlgren and *O. guacuyule* [Liebm. ex Mart.] H.X.) is widely distributed in Middle America.[1] Areas where the Corozo palm may be found as one of the most numerous of the taller trees in the rain forest are shown on the map; much of this land has been cleared at sometime in the past and it appears that the abundance of the Corozo is probably related to such disturbances. Also indicated on the map are locations where the Corozo is more typically found in isolated groves.

Description of the Corozo Palm

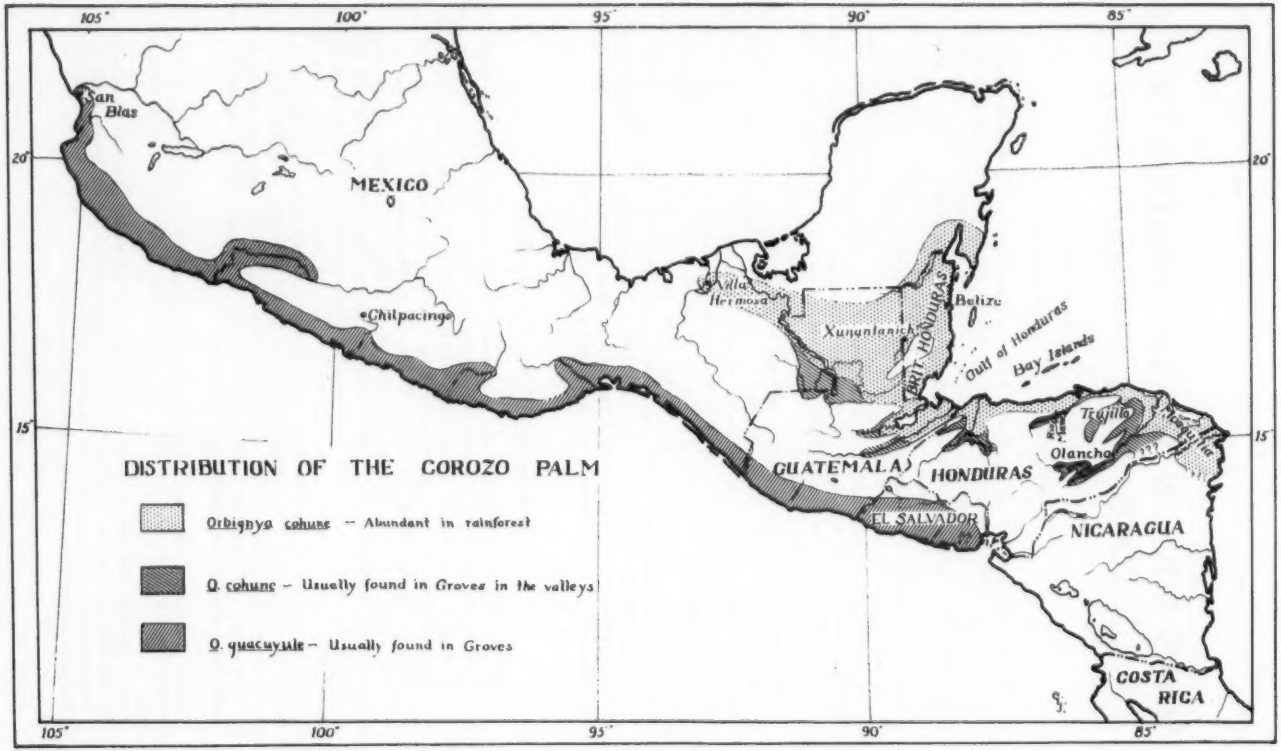
The two species of *Orbignya* are very much alike in external appearance although they differ in the size and shape of their staminate flowers and in size of nut. Since they also behave similarly in nature they will be treated under the native designation of *Corozo*. The mature tree grows as high as 100 feet, to a diameter of 2½ feet and, when young, has pinnate leaves 25 to 30 feet long. The nuts of the Corozo are produced on a stalk 3 to 4 feet long, each nut being about the size of a turkey egg; the drooping stalk hangs down like a giant bunch of grapes and weighs about 100 pounds.

The tree has many uses. The nuts are used as an oil source by the local inhabitants and in the last few years they have become a source of special oils for the soap industry.[2] Until recently the oil was also used in lamps in some areas. The flowers are demanded for certain religious services and, on special occasions, for the decoration of graveyards on the West coast of southern Mexico. Wood and wine are obtained from the main trunk and from the "cabbage" at the top of the tree. Thatch, umbrellas, and a bulky kind of cape are made from the leaves.

[1] Efraim Hernández Xoloxotzi, "Estudio Botanico de las Palmas Oleaginosas de Mexico." *Sociedad Botánica de Mexico*, Bol. 9:17, 1949. The basis of the species designations is presented.

Paul C. Standley, The cohune palm an *Orbignya*, not an *Attalea*. *Tropical Woods*, 30:1-3, 1932. No difference was recorded for the two separate ranges of the species of *Orbignya*.

[2] Two vegetable oil companies with sizeable factories were using the Corozo nuts in 1956, La Blanquita in Honduras and Kong Hnos. in Guatemala.


105°
100°
95°
90°
85°
20°
15°
San Blas
MEXICO
Chilpancingo
Villa Hermosa
Xupantanich
Belize
Gulf of Honduras
Bay Islands
Trujillo
Olancho
GUATEMALA
HONDURAS
EL SALVADOR
NICARAGUA
COSTA RICA
DISTRIBUTION OF THE COROZO PALM
Orbignya cohune – Abundant in rainforest
O. cohune – Usually found in Groves in the valleys
O. quacuyule – Usually found in Groves

Distribution of the Corozo Palm

The definitive study on the distribution of the Corozo palm remains to be made. The designation of *O. guacuyule* as a separate species from *O. cohune* was made in 1949 by Hernandez; prior to this time other workers, for example Standley and Lundell, used *O. cohune* for both forms. (See footnote 1.) The range of *O. guacuyule* is apparently the Pacific side of Middle America from about San Blas, Nayarit, to El Salvador, and possibly into Honduras.[3] In Mexico, at least, the tendency is for it to occur in groves. Whether it is a random component of the rain forest in the Pacific coastal plain of Guatemala is yet to be determined. It would be valuable to determine this fact for, if it is always found in groves such as the large ones as at San Blas, the human factor in the evolution of this species may possibly be greater than is now assumed.

On the Atlantic side of the continent the *O. cohune* is found from Villa Hermosa in the state of Tabasco, Mexico, to the Bay Islands and the Mosquitia of Honduras and Nicaragua. In lowland, tropical rain forests of the Gulf of Honduras from Belize, British Honduras, to Trujillo, Honduras, Corozo palms occur over extensive and more or less continuous areas. In British Honduras the forest association with *O. cohune* is usually considered climax and is called "Cohune Ridge." Although the main emphasis of this discussion is on the groves of Corozo in the outlying country away from high rainfall zones, it is worthwhile to question the notion of some British Honduras students that the Corozo is a climax species. Charles Wright of the Land Use Survey in British Honduras has said that mounds of stones, assumed to be old house sites, are often found in lands recently cleared from the tall "Cohune Ridge" forest association. To many ecologists[4] the very abundance of one species in a rain forest would suggest a disturbed condition.

In the interior low valleys, from Mexico to Honduras, groves of the Corozo may be found. My experience has been mainly in Honduras where in the Olancho seven groves of Corozo (*O. cohune*) were found at an elevation of about 1,500 feet. Four groves were also found on the Pacific coastal plain. Other observers have said that there were more groves within the areas outlined on the map. The highest elevation at which *O. guacuyule* is reported is in the mountains below Chilpacingo de los Bravos in the State of Guererro, Mexico, which is at an elevation of 4,400 feet. The more usual location of the groves of both forms is under 2,000 feet. (See footnote 4.)

Pittier has reported the *O. cohune* from the Rio Yaracuy drainage in Venezuela,[5] but other writers have indicated that it is restricted to Middle America. The nomenclature of these palms is unsettled. Hawks, for example, has said *Attalea amygdaline* HBK. was called a "cohune" palm in Columbia and Brazil.[6] As a first approximation it

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[3] Paul C. Standley, *Trees and Shrubs of Mexico*, U.S. National Herbarium Contributions, 1-1721, 1920-1926.

B. E. Dahlgren, "Economic Products of Palms," *Tropical Woods*, 78:10-35, 1944.

Personal communications with José M. Tárano T. of Servicio Cooperativo Interamericano de Agricultura, Guatemala; Professor C. O. Sauer, Geography Department, and Mr. Stanton Cook, Botany Department, University of California, Berkeley.

[4] C. L. Lundell, *The Vegetation of Peten* (Carnegie Institute, Washington, D.C.), 478:53, 161, 196 (1937).

J. H. N. Smith, "Forest Associations of British Honduras," *Caribbean Forester*, 6:45-70 and E. Martinez Lopez, *Geografia Ilustrada de Honduras*, p. 50, 1928.
131-158, 1945.

N. S. Stevenson, "The Cohune Palm in British Honduras." *Tropical Woods*, 30:3-5.

Personal communication with Dr. Harold Moore, Bailey Hortorium, Cornell University; Dr. Monroe R. Birdsey, Botany Department, University of Miami, Florida; Mr. Charles Wright, Land Use Survey, British Honduras in 1954; and Mr. Clinton Edwards, Geography Department, University of California, Berkeley.

[5] H. Pittier, *Catalogo de la Flora Venezolana*, Tomo I, Tercera Conferencia Interamericana de Agricultura, Caracas, p. 143, 1945.

[6] A. D. Hawks, "The Major Kinds of Palms." *Botanical Papers. Fairchild Tropical Gardens*, 1:12, 1950.

is probably adequate if we consider the primary area of occurrence as north of the Mosquita for *O. cohune*.

Habitat of the Corozo Palm

The habitat differences between the rain forest and drier locations cause certain differences in the distribution patterns of the Corozos. In the higher rainfall zones, Corozo palms grow on hillsides and mountains; it is possible that in regions with over 125 inches of rainfall annually the trees need the improved drainage offered by such slopes. They may also be found on the coastal flats. In drier sites they are on the lower river terraces and flats of the adjacent valley floor. In one spot in Honduras they were even found on low hills near a large grove on a low river terrace where the annual rainfall was only about 40 inches.

The soil under these stands of Corozo is typically dark brown, loamy, high in organic material, and high in water-soluble phosphate. The apparent fertility of the soils probably reflects the protection that the Corozo groves, or *Corozales*, have afforded the soil from the ravages of cultivation over the last 400 years or more. Further study of the soil under the isolated groves in Central America might give us insight into what tropical soils, long rested from cultivation, may be like.

Indicators of Man's Role in the Distribution of the Corozo

It is probable that pre-Columbian uses of the Corozo palm were roughly similar to modern uses. At present agricultural villages are commonly associated with the *Corozales* in the drier margins of the areas occupied by the species. The question arises as to which came first, the villages or the groves. The answer is not always clear, but the mature appearance of most of the groves and historical data lead to the conclusion that the groves have been present on the sites for at least 400 years. As indicated, the soils are much less deteriorated and more nearly mature than those in the surrounding land.

A great reduction in the number of Indians in the early and middle sixteenth century allowed the Corozales to become dense and relatively unused. Recently there has been a great increase in the human population and in some locations farmers, with new techniques available to them, have begun to clear portions of the grove in order to cultivate the extremely fertile soil. As a result the groves are gradually shrinking in size. This is at variance with the more usual practice in the rain forest areas where many of the Corozos would be left in the field.

There is abundant evidence of the use of land under and adjacent to the *Corozales* in former times. Potsherds, stone tools, and ornaments, as well as temple and house sites, are often found under Corozo groves. This archeological material may be obtained with a small amount of random digging, so well is it distributed through the soil. In the high rainfall zone at Xunantanich, near Benque Viojo, British Honduras, the Corozo must have been present and used in considerable quantities because on abandonment of the site these palms covered the temple and pyramid mounds of the old Mayan ruin. Archeologists have cleared most of the trees from the site, but some still remain. In the plains below, extensive and dense stands of the palm are still found. The relation between archeological sites and Corozo groves is equally conspicuous in the Olancho district of Honduras.

Dense stands of any single species are most unusual in the tropics except where man disturbed the balance. If given enough time, the Corozos probably would be replaced by the taller rain forest species.[7]

Pure stands are considered worthy of note by the local inhabitants of Honduras. When a single species is conspicuous in the landscape the location is often given the name of the species as a place name, for example, Corozal, Naranjal, Carrisal, Jicoral, or Jaguas.

[7] O. F. Cook, "History of the Coconut Palm in America," Smithsonian Institute, Contributions from the U.S. National Herbarium, 14:314, 1910.

Once the Corozo established itself anywhere, presumably in pre-Columbian times, it was not easily eradicated. When the tree is young, and if it stands alone, the leaves may be bent and broken. After they have dried they will burn and if the fire is hot enough the tree will be killed. If not, as is more usual, the trunk will sprout again from the top. In all palms the conducting tubes are dispersed throughout the interior of the trunk so that palms cannot be killed by girdling as other trees may be.

In most cases agriculturalists do not want to kill out the palms. They are useful plants and in these lands farmers traditionally leave useful trees when the fields are cleared for planting. The palms left in the fields provide the seed for the regrowth-plant association in which Corozo may be a conspicuous member. Trees in gardens about the houses, if they contained Corozos, might also have served as a seed source. It is possible that the Corozos moved into the fields from the forest edge; this seems doubtful, however, for, as Prof. Carl Sauer has pointed out, there are more aggressive colonizers than this palm. In any case, the forests around the margins of the outlying groves do not contain the Corozo.

The Corozo nuts are heavy. They are not blown by the wind nor do they roll downhill readily. However, livestock eat them and in this way the seeds may be transported considerable distances. In the high rainfall region, seeds will even germinate in the open sunlight of a pasture, although not in great abundance. It is also logical to assume that cattle carry the seed in the drier locations, but there the seeds do not seem to germinate readily. In almost all cases the seedlings observed were under the shade of other Corozos. We have a partially controlled experiment in the ability of stock to eat and disseminate the large seeds of the palms. The seeds of the Coyol palm, *Acrocomia mexicana*, are eaten by livestock and they are spread over many of the pastures of the drier interior of Honduras where they germinate and produce mature trees. This does not occur with the Corozo. Usually the seeds from which sprouts are growing are buried under one quarter to two inches of soil. About 90 per cent of the seedlings in the Corozal at Rio Mani, in the Honduran Department of Yoro, were in this category, and only 10 per cent of them were sprouting at the surface of the soil although great numbers of seeds were on the surface. This may be one of the reasons why the Corozo is not extending its range in the peripheral zones. The isolated groves in the case of *O. cohune* are upstream, on islands, or over ridges from the center of the optimum range of the species. Unless *O. guacuyule* is found widely dispersed in the rain forest of the Pacific coast of Guatemala, it may be that it is distributed entirely in a series of groves. The upstream location of the isolated groves of Corozo indicates that running water is not a prime dispersal agent. If it were, the groves would be expected to be spread up and down all the creeks. The logical conclusion from the above findings is that man probably carried and planted the seeds that were ultimately to produce the *Corozales*.

Summary

The Corozo palm, so useful to man, has been carried into interior Honduras and Guatemala and probably over the Pacific Coast of Middle America north of El Salvador, and there planted in the drier portions of the lands of low elevation. The groves resulting from these introductions are distinctive units of the landscape. The palms are difficult to eradicate and, therefore, maintain any position once gained. Since they are associated with archeological ruins and housemounds in many locations, they can serve as indicators of otherwise hidden sites.

THE REDLEGS OF BARBADOS

By EDWARD T. PRICE
Los Angeles State College

Poor white people do not belong in a colonial world of white masters and colored laborers. They not only stand out as anomalies, but are likely to be hard-pressed for survival in a society that has no niche for them, that assumes they will not exist. The poor whites on the other islands of the Lesser Antilles, described by Grenfell Price,[1] are mostly living in distinct settlements with some degree of economic self-sufficiency—but Barbados offers no such opportunities. It is not surprising, then, that the once numerous Redlegs have virtually disappeared as a group on Barbados.

The term "Redleg" on Barbados probably refers to the sunburn picked up by light-skinned people in sunny latitudes. The name originally drew my attention to the group because of the fact that it is used in South Carolina occasionally to refer to a mixed-blood group (and there probably implies Indian blood). Since South Carolina was settled by Barbadians, I had thought of the possibility that the two Redleg groups, each an anomalous proletariat in a biracial society, might be related. I found no concrete evidence for this, but think it possible that the name in the two places had a common origin. It is said to have been used in Scotland to describe the kilted highlanders, but I have obtained no knowledge of when it was first used in either Barbados or South Carolina. The Barbados Redlegs have also been termed Redshanks and Scotland Johnnies (some of them reside in the island's hilly Scotland District).

The Redlegs are survivors of the heavy white immigration into Barbados during the seventeenth century. Sugar was introduced commercially by the early 1640's and proved so profitable that it quickly surpassed all other crops. Population grew rapidly with the recruiting of labor in Britain and Ireland, and the importing of African slaves. Excerpts from a journal of 1654 illustrate the prevalent themes of the day: "this Iland is the Dunghill whereon England doth cast forth its rubidg . . . manured the best of any Illand in the Inges. . . . But it maintains more souls than any piese of land of the bigness in the wordell."[2] Indentured servants came in number; if they survived the merciless treatment, they might receive a few acres for their own at the expiration of the contract. Sometimes the recruiting was forceful: men were shanghaied or, in the language specific to the day and place, "barbadoed." Political prisoners were sent to Barbados, especially during the Civil War and after the Bloody Assizes of 1685.[3] Prisoners from Scotland and Ireland were sent to Barbados as late as the Battle of Culloden in 1746.

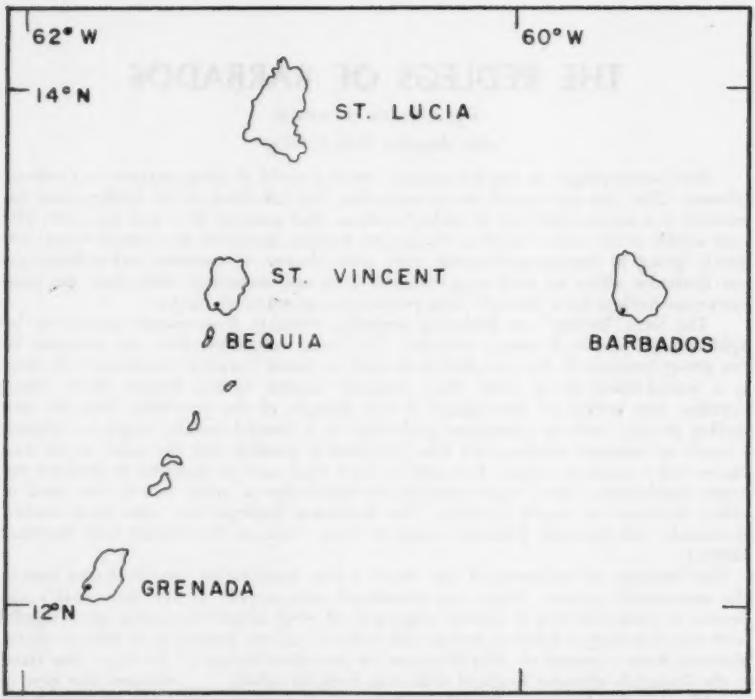
During the seventeenth century many of the farm units were small, and the Europeans outnumbered the slaves, but the heyday of the small proprietor died with the flush of sugar crops on the virgin soils. Before 1700 the whites became so alarmed at the increasing preponderance of negro slaves in the face of white emigration that legal measures were taken to maintain a yoemanry on the island. Every sugar estate was required to maintain a footman for every 20 acres and a horseman for every 40 acres (the ratio seems to have varied from time to time).[4] The militiamen thus pre-

[1] *White Settlers in the Tropics*, American Geographical Society (New York, 1939), pp. 83-100.

[2] Henry Whistler's *Journal of the West India Expedition, 1654*, Sloane Ms. 3926, British Museum. (Quoted in series of articles on people of Barbados in the *Barbados Advocate*, April 11, 1952.)

[3] John Camden Hotten, in *The Original Lists of Persons of Quality and Others*. . . . (London, 1874) names several hundred of the latter.

[4] *The Groans of the Plantations* (London, 1689), p. 14, "We cannot now be at the Charge to procure and keep White Servants, or to entertain Freemen as we used to do. . . . So that our Militia must fall."



scribed were each assigned a house and a small plot of land on the estate. The forces saw little activity in maintaining order on Barbados, but were several times called on to aid in attacks on other colonies. As military activity waned, so did the responsibility of the militia. Assured of a minimum living from their two acres and with little opportunity to better their positions, the militiamen and their families developed into an ambitionless group. So they were almost universally described by travelers of the eighteenth and nineteenth centuries, who also reveal some of the feelings that kept the Redlegs a people apart.

George Washington, who visited the island in 1751 wrote: "Every Gentn. is oblig'd to keep a white person for ten Acres capable of acting in the Militia and consequently those persons so kept cant but (be) very poor."[5]

George Pinckard in 1806 referred to a numerous class of inhabitants between the great planters and the people of color, people who had lived on the island so long they regarded it as their native abode, not looking to England, he noted with surprise, as another and better home. They "obtain a scanty livelihood by cultivating a small patch of earth, and breeding up poultry, or what they term stock for the market."[6]

H. N. Coleridge in 1834 reported on this special class of people who existed ". . . in consequence of the large white population" and who had "an indefeasible interest for their lives in a house and garden. . . . They owe no fealty to the landlord.

[5] *The Diaries of George Washington, 1784-1799*, edited by John C. Fitzpatrick (Boston, 1925), v. I, p. 29.

[6] *Notes on the West Indies* (London, 1806), pp. 78, 132.

make him no acknowledgement, and entertain no kind of gratitude towards him. . . . They will walk half over the island to demand alms, or depend for their subsistence on the charity of slaves. . . . Yet they are as proud as Lucifer himself, and in virtue of their freckled ditchwater faces consider themselves on a level with every gentleman in the island."[7]

Sir Andrew Halliday noted in 1834 that a remnant of the "descendants of the first white laborers" still existed and "were reputed to be the most indolent, ignorant, and impudent race of beggars that were ever tolerated in any community."[8]

Emancipation of the slaves in 1834 brought a quick termination to the status of the militia people, which had lasted for a century and a half. No longer needed to keep the slaves in check, they were turned off the estates, and a police force was established to maintain law and order. The sugar estates employed the freedmen, who on Barbados had no alternative; in other colonies the freedmen often took to the bush or struck out on their own land, but all the useable land in Barbados was already owned and in cultivation.

About 2,000 whites from the militia class are estimated to have been put off the estates.[9] These people did not take to the only evident type of employment—working with negroes in labor gangs. Many took up residence in the villages of the poorer and more remote windward side of the island, eked out livings from various sorts of odd jobs, and acquired reputations as professional paupers.[10]

Between 1859 and 1879 the government took an interest in the plight of the Redlegs and a number of reports were prepared concerning them. A report of the Poor Relief Commission stated: "The white paupers as a rule have larger pensions than the black and colored—there being greater destitution—and they sometimes though able to work are pensioned, because they say they cannot find employment. . . . they consider themselves above work and almost equal to their employer."[11] An independent observer of the same period said, "The very poorest and most miserable people in the whole island are whites."[12]

The physical condition of the Redlegs was as pathetic as their economic condition. John Davy commented that the poor whites resembled more albinos, than Englishmen when exposed to the tropical sun.[13] He described them as sickly white or light red in color, and noted marks of feebleness. During the First World War the Rockefeller Foundation sponsored a hookworm survey of Barbados, which revealed a very high rate of infection in the poor windward parishes; the disease was reported especially noticeable among the poor whites who showed its effects in profound anemia, emaciation, and faulty growth.[14]

A detailed record survives of one private attempt to help the Redlegs.[15] A resident of St. Philip, the southeastern parish, died in 1857, leaving his residence and estate for the purpose of providing a school for the children of poor white people living in that parish. Up to 36 children were to be provided with instruction, books, and two suits of clothing per year. The school operated off and on over the years, but finally was closed in 1949 because there were virtually no poor whites left in St. Philip. The funds available for the school have been used to provide scholarships for worthy children of both races.

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[7] *Six Months in the West Indies*, second edition (London, 1838), p. 99.

[8] *The West Indies* (London, 1837), pp. 56-7.

[9] Governor Rawson's Report on Population, 1851-1871, Appendix E, Minutes of Assembly Council, 1872.

[10] Report of Commission on Poor Relief, Appendix B, Minutes of Assembly, 1877-1878, p. 92.

[11] Appendices to the Report of the Poor Relief Commission, 1875-1879, Bridgetown, p. 3.

[12] Greville Chester, *Transatlantic Sketches in the West Indies, South America, Canada, and the United States* (London, 1869).

[13] *West Indies Before and Since Slave Emancipation* (London, 1854), p. 114.

[14] G. P. Paul, "Report on Ankylostomiasis Inspection Survey of Barbados, Sept. 4, 1916-Nov. 16, 1918," International Health Board, Rockefeller Foundation, pp. 31-52.

[15] Minutes of meetings of Emanuel John Cock Hutchinson School Trustees, in hands of Rector H. V. Armstrong of St. Philip Parish, Barbados.

Now the Redlegs have all but disappeared. Opportunities in the city of Bridgetown (population 80,000) have undoubtedly been the biggest cause drawing them away from the rural areas. Shops are more ready to employ them as clerks than they are negroes, and a number of the more enterprising Redleg families have achieved financial success and recognition. Bridgetown has many poor whites today, and it is most likely that they derive from the old Redleg class.

Only a hundred or two Redlegs survive in the negro villages of the windward parishes. They may be seen walking along the roads or working on highway crews, living in much the same fashion as the colored villagers. Some have intermarried, but most of the survivors maintain a racial pride and a degree of aloofness from the negroes with whom they live in such close proximity and association.

The account of the Redlegs would end with their virtual disappearance on Barbados had not the nineteenth century efforts to resettle them borne some fruit. After investigation of their condition, the Governor in 1859 made arrangements for moving several hundred of them to another island, but the plan failed when the House of Assembly refused to appropriate the money to transport them. A few years later, however, one of the Parish Rectors arranged with an estate proprietor on St. Vincent to transport a number of the Redlegs to that island. Other families followed the good reports of the first, apparently on their own, so that, by the late 1870's, three or four hundred were settled in the Dorsetshire Hill district of St. Vincent.[16] At that time they were reported as leasing lots of an acre, clearing the forest, burning charcoal, cultivating the land until the fertility was exhausted, then moving to new plots. Apparently the impermanent nature of this farming did not persist, for Dorsetshire Hill is now a compact, densely populated, and intensively farmed settlement of probably 300 whites of Barbadian origin. Just beyond the outskirts of Kingstown on the southern end of the island, the Dorsetshire Hill community occupies a tract of steep ridges covered with a deep, friable soil. The land is as neatly farmed in food crops and pastures as any land anywhere. Houses are small, but far above West Indian standards in both size and neatness. The community has maintained its separateness with very little intermarriage. Most of its residents have one of half a dozen common surnames—Davis, Gibson, Hingston, Marshall, Marford, Bradshaw. The community has its own school and an Anglican Church (Catholicism is predominant on St. Vincent). For many years there seems to have been no room for growth; emigration has taken colonists in some number to the United States and Canada.

Two other colonies of Redlegs in the Windward Islands have also survived more distinctly than the parent group on Barbados, but the Grenada and Bequia settlements have not maintained their distinctness so clearly as the Dorsetshire Hill community. None of these three colonies shows the degraded, depressed, and demoralized characteristics attributed to the Redlegs on Barbados. The difference may be explained by the opportunities the Redlegs had to form discrete settlements of their own on the less densely settled islands.

The Bequia colony was considered a failure,[17] but actually a number of families, perhaps a hundred people altogether, are still living on Pleasant Hill above Port Elizabeth. This hill land on Bequia is both dry and steep for the best farming, but a variety of food crops is being grown on terraced fields. The shipping business is probably of more importance to the colony. Some of the men operate inter-island schooners, and most of the families share in the ownership of the vessels through family syndicates. Family names are Goodan, Davis, and King. Considerable emigration to North America has occurred here also.

The Mt. Moritz settlement in Grenada, in the hills overlooking the coast two or three miles north of St. George's, has another group of white Barbadians. Though they have begun to intermarry with the negroes, the community probably has most of the unmixed whites to be found on the island. The leading names in the community are

[16] Same as 11, p. 18.
[17] *Ibid.*, p. 20.

Edwards, Dowden, Harris, Graves, and Medford. These families have probably been on Grenada since the 1870's, though no present member of the colony seems able to offer a specific account of its origin.

They have also been culturally distinct from the Grenadans. The negroes used to recognize them as a peculiar group to be viewed with curiosity or fear. The speech of the Mt. Moritz people is easy for an American to understand (true of most Barbadians, also), whereas the speech of the negro Grenadans is often not intelligible. The Barbadians have acquired a reputation as industrious growers of vegetables, whereas the rest of the island produces tree crops (cacao, nutmeg—curiously considered as a lazy type of farming) or sugar. The Mt. Moritz whites are particularly proud of their method of hillside cultivation wherein their gardens are hoed up into rows of small basins to prevent soil erosion; these plots have the aspect of a fine-textured version of the Barbados sugar cane hole pattern, which is most probably their prototype.

Many Mt. Moritz people now have jobs in St. George's. The community probably includes 200 unmixed whites. Its school in 1956 had an enrollment of 154, of whom about a third appeared to be white. The people are still recognized on Grenada as Barbadians, and even negroes who live in the community are likely to be called "Bajans."

Among the three colonies described and the original group on Barbados, a large number of surnames are considered characteristic of Redleg families. Each of the windward parishes on Barbados seems to have its own names. A few of the names have also occurred among the planter class on Barbados. Nearly all the names were listed in the Barbadian censuses of 1679 and 1715.[15] The Redlegs are sometimes said to have sprung entirely from the deportations following the Monmouth Rebellion of 1685, but actually the Redleg names do not show up on Hotten's lists of deportees. (See footnote 13.) It is evident that the Redlegs have sprung more broadly from the entire British immigration into Barbados during the seventeenth century, and that they developed as a distinct group because of the narrow (and here legally provided) opportunities in a stratified society. Their disappearance on Barbados has been made possible through an increase in the possibilities of social mobility not well provided by the smaller cities of Grenada, St. Vincent, and Bequia.

[15] On file in Registration Office, Bridgetown.

The material for this article was gathered during a trip to the West Indies (in the summer of 1956) under the auspices of the University of California and the Office of Naval Research.

OBSERVATIONS FROM ABROAD

In addition to H. Louis Kostanick and Edward T. Price, several other members of our Association of Pacific Coast Geographers were abroad recently: H. Bowman Hawkes (Fulbright) lectured in Germany; Richard F. Logan (National Science Foundation) spent a year in South West Africa; Robert Mayfield (NRC-ONR) did field work in northern India, and Francis J. Schadegg (Fulbright) was exchange professor in England.—Editor

Berlin Revisited

The city of Berlin is still in occupation status, a 75-mile ring of Soviet guards encircling its western portion. Inside is the erratic 27-mile sector boundary separating East from West. Like the twitchings of a madman's pencil it zigs and zags through backyards, across garden plots, along the middle of one street, the east sidewalk of another. If I had been told twenty years ago, when I spent some three years in the proud and beautiful city of Berlin, that such a line would ever divide the city, I would have scoffed. If anyone had intimated that in 1957 telephone lines, water supply systems, bus and street car lines would be severed; that currency would vary from one part of the city to another; that motor cars on one side would be strictly different from those on the other; that identical wares on display in shop windows on Alexanderplatz and on Kurfuerstendamm would carry dissimilar brand names; that policemen would dress differently and people would look with some suspicion upon one another—if such a possibility had been suggested twenty years ago I would have said "utterly fantastic." Yet, there it is.

The cultural contrasts between East and West visible in Berlin today suggest the elusive nuances buried beneath the surface. One wonders how these divided Germans feel about themselves . . . about their neighbors . . . about the past . . . about their relations with us. What kind of a world do they want? Or, not want? Are there deep-buried antagonisms? A fixation on past glories?

One may acquire a partial perspective by living among them sympathetically and with an open mind. For example, our landlady, a World War II widow, still cherishes a silent but deep respect for the bygone "glorious days" of the middle 1930's under Hitler. Her son voted for Adenauer, but he cast his "ja" with great reservations. One of our fellow roomers, a retired Prussian soldier, looked with deep suspicion upon NATO, likewise upon an atomically-armed and divided Germany. Here, under one roof, were three divergent, perhaps irreconcilable viewpoints. Among my colleagues at the Free University of Berlin opinions ran the gamut from complete rejection of German militarism to a rather haughty admiration and respect for it. Most, but not all, of the professors were anti-communist, and while the often-confused students were definitely pro-German and pro-European, they were *not* necessarily pro-Western.

Even more thought-provoking were the impressions gained from friends living behind the Iron Curtain; in their eyes communism is not the unqualified failure we are led to believe.

The last three months of my stay in Europe were spent in the Rhineland provinces of western Germany at the University of the Saarland. This is Catholic Germany and here the adherence to the Adenauer policy is much stronger than in Protestant Germany to the north and east. These historical and religious differences are of no mean dimensions. Throughout Germany there is much that will tend to support the *status quo* but there are also many tangible forces which would rally to a new "cause," i.e., a change in any one of several directions. Not only Berlin but most of Germany is vaguely dissatisfied with the *status quo*.

—H. Bowman Hawkes

Christmas in South West Africa

Christmas, 1956, was spent half a world away from UCLA—in the heart of South West Africa. We had gone into that distant land unknown, without friends, and much concerned about how we might be received. We had anticipated having to spend most of our time completely alone, and we expected that at Christmas our feelings would be at their lowest.

But it was quite different! Everywhere we went we were made to feel welcome. And at Christmas, we were made so much a part of the celebration of several families that we shall never forget it.

On the 24th of December, we drove out from Windhoek, the territorial capital, across fifty miles of mile-high upland covered with thorn-bush savanna to Farm Tara, a cattle and karakul ranch, to join the Hanssen family in their festivities. During the afternoon, the natives had their Christmas: tall black Ovambos dressed in cast-off European clothes; chocolate-brown Berg Damara women in mid-Victorian dresses of gay cotton prints and tall turbans; little Hottentot women with weirdly-shaped faces, tremendous posteriors, and yellow-bronze skin, dressed in garishly-colored flaring skirts. Each of the fifty natives working and living on the ranch got a present from the "Baas"—scarves and yards of bright print cloth for the women, shirts for the men, candies for the children, and a bottle of wine for the family. Everyone was smiling and making jokes, and one Hottentot, imitating a baboon, bit one of the Hanssen men in the leg—to the hysterical delight of everyone. All this was a far cry from the stories we had heard in America about the terrible oppression and virtual enslavement of these natives.

Then, with the Hanssens, we drove off across the veld to the next ranch, Farm Hohenhorst, belonging to the Widow Cloete. There we spent Christmas Eve—in a lovely, cool, thick-walled house with broad stoeps (porches) set amidst landscaped gardens. The huge, high-ceilinged rooms with their heavy, dark furniture could well have been in a baronial hall somewhere in Europe, and the heavy cut-glass goblets, elegant lace tablecloth, and fine silverware completed the illusion.

Here, as in many S.W.A. homes, the main festivities were on Christmas Eve. About the huge banquet table were Mrs. Cloete, her two daughters and their husbands, her farm manager; Thuys Greeff, director of Education for South West Africa, his wife and daughter; the Hanssens, and ourselves—16 in all. The meal was beyond belief—there must have been 25 different dishes, some similar to what we have on such occasions, others such as we had never seen before. There were formal toasts in champagne, speeches by Thuys and Dick, and liqueurs and coffee on the stoep in the moonlight afterward. Who could have expected such graciousness and refinement out in the midst of the African bushveld, on a farm where only the night before a leopard had killed a calf in a corral within sight of the house!

—Richard F. Logan

An Indian Periodical

The Department of Geography, Ranchi College, Bihar University, began the publication of *Geographical Outlook* in January, 1956. Published semiannually, the new English-language periodical will serve largely as an outlet for the geographers of Northeastern India, but the editor, Dr. H. Ahmad, and staff are hopeful that a wider group of contributors will be attracted. The editor has expressed particular interest in papers on regional geography. The first issues have included a variety of subject matter, and some of the better articles from Indian geographers have come from previously unpublished doctoral dissertations. Book reviews have been limited to Indian and Asian topics, but not necessarily as a matter of policy.

India's current shortage of foreign exchange together with related restrictions on imports of paper and other printing materials, may hamper the progress of *Geographical Outlook*. An annual subscription of $1.00 secures the journal for an overseas subscriber.

—Robert Mayfield

A Year at Shoreditch Training College

Egham Surrey, England

A year at an English Training College as an exchange professor was an interesting and illuminating experience. Geography teaching there differed from the usual program in an English liberal arts university-college. Geography at Shoreditch was a general education subject for broadening and self-development of the student rather than preparation to become a professional geographer or even a specialist in geography teaching. However, a limited amount of curriculum work could be elected in geography teaching. Since the programs of liberal arts colleges, universities, and other training colleges are different, Shoreditch cannot be considered typical in its geography program.

Visits to some thirty different schools provided an opportunity to become somewhat acquainted with geography teaching at all levels, from infant school through secondary schools. Unfortunately, books and certain other teaching materials are limited in supply, but films and other visual materials, as well as activity projects related to geography, are no strangers to English youngsters. There is a great deal of emphasis and some unusually fine work done on maps, models, weather observations, and equipment. Physical geography is strongly emphasized, and the youngsters handle the vocabulary and concepts well. Geography appears by name in the curriculum and is generally recognized as a field of study through the secondary schools. A fine *Manual for Geography Teachers* has been prepared by the Geography Subcommittee of the London Institute of Education. It is an excellent curriculum guide with much bibliographical material and lists of teaching aids. The philosophy of geography and its relationship to the social studies is well expressed.

Another widespread activity that impressed me greatly is the use of outdoor education and field trips for geography and related subjects. Several-day trips are taken to some part of Britain, and it is common practice to take youngsters 12 years of age and above on summer two-week, or longer, tours on the continent. Observations, both physical and cultural, are planned parts of these excursions.

The extent of geography teaching varies with the school. It will depend upon the facilities and the teachers, the viewpoint of the headmaster, the purposes which the school is supposed to serve, as well as the nature of the region and the student body. The inclusion of geography questions in the 11 examinations taken by most English youngsters 11 years of age and in the General College Examinations for college entrance are indicative of the widespread teaching of the subject throughout the school system. It is considered one of the important fields of knowledge in qualifying for advanced or higher level education.

—Francis J. Schadegg

TWENTIETH ANNUAL MEETING

Stanford, California, August 25-26, 1957

The twentieth annual meeting of the Association was held at Stanford University with Dr. Paul Griffin as chairman of local arrangements. Four half-day sessions were devoted to research papers and a business meeting. The address of retiring President Huey Louis Kostanick was presented on Tuesday evening, August 27, at the annual dinner.

Program

HARRY P. BAILEY, University of California, Los Angeles, "A Method of Determining Astronomic Latitude from Meridional Tilt."

JOHN D. CHAPMAN, University of British Columbia, "Research and Resource Problems in British Columbia."

HOWARD J. CRITCHFIELD, Western Washington College, Bellingham, "What a Geographer Needs from Climatology."

GLENN CUNNINGHAM, Glendale, California, "Food for Tahiti."

*KENNETH A. ERICKSON, University of Oregon, "Isochrons of Logging on the Pacific Slope of Oregon, 1890 to 1940."

HOWARD F. GREGOR, San Jose State College, "Urbanization and Agriculture: Resource Conflict in California."

BARBARA HAUN, Western Washington College, Bellingham, "Historical Geography of Tin Mining at Lost River, Alaska."

*J. GRANVILLE JENSEN, Oregon State College, "The Aluminum Industry of the Pacific Northwest: A Reappraisal and Forecast."

*CARL L. JOHANNESSEN, University of California, Berkeley, "Man's Role in the Distribution of the Corozo Palm."

*HUEY LOUIS KOSTANICK, University of California, Los Angeles, "Eastern Europe —Retrospect and Prospect."

WILLIS B. MERRIAM, State College of Washington, Pullman, "Recent Trends in the Economy of Hawaii."

JAMES J. PARSONS, University of California, Berkeley, "The Grasslands of the Lower Amazon."

FOREST R. PITTS, University of Oregon, "Japanese and American World Views and Their Landscapes."

*EDWARD T. PRICE, Los Angeles State College, "The Redlegs of Barbados."

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